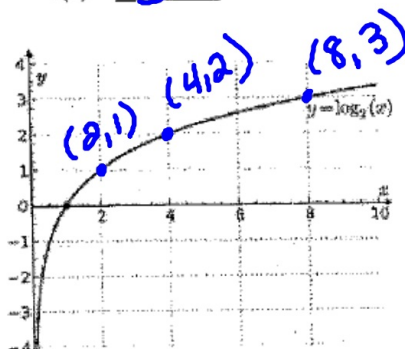


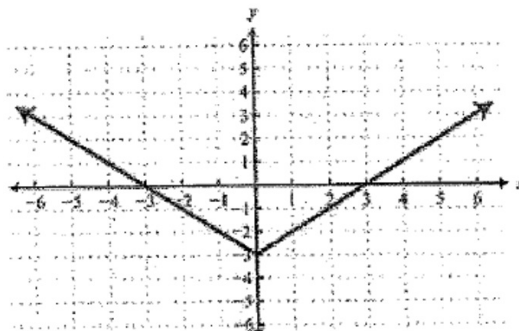
7.) A logarithmic function is graphed below, find the value of the following:

$$\begin{aligned} f(2) &= \frac{1}{2} \\ f(4) &= \frac{2}{3} \\ f(8) &= \frac{3}{2} \end{aligned} \quad \text{looking for y:}$$



7.) An absolute value function is graphed below, find the value of the following:

$$\begin{aligned} f(-3) &= 0 \\ f(2) &= -1 \\ f(5) &= 2 \end{aligned}$$



8.) If  $7^x = 35$ , find the value of  $7^{-x}$ .

$$\begin{aligned} 7^x &= 35 \\ 7^{-x} &= \frac{1}{7^x} = \frac{1}{35} \end{aligned}$$

8.) YOU TRY: If  $5^x = 20$ , find the value of  $5^{-x}$ .

$$\begin{aligned} 5^x &= 20 \\ 5^{-x} &= \frac{1}{5^x} = \frac{1}{20} \end{aligned}$$

$$\begin{aligned} 3^x &= 24 \text{ what's } 3^{-x} = \frac{1}{24} \\ 17^x &= 25 \text{ what's } 17^{-x} = \frac{1}{25} \end{aligned}$$

1.) What is the slope of the line  $4x - 3y = 9$ ?

$y = mx + b$  solve for y!

$$\frac{-3y}{-3} = \frac{-4x + 9}{-3}$$

$$y = \frac{4}{3}x - 3$$

$m$

$$m = \frac{4}{3}$$

1.) YOU TRY: What is the slope of the line  $3x + 2y = 6$ ?

$$\frac{2y}{2} = \frac{-3x + 6}{2}$$

$$y = \frac{-3}{2}x + 3$$

$m$

$$m = -\frac{3}{2}$$

2.) Given that one zero of  $f(x) = x^3 + 9x^2 + 23x + 15$  is -5, what are the other two zeros? plug in for x, get 0.

$$\begin{array}{r|rrrr} -5 & 1 & 9 & 23 & 15 \\ & \downarrow & -5 & -20 & -15 \\ \hline & 1 & 4 & 3 & 0 \end{array}$$

FACTORS  $x^2 + 4x + 3$

$$(x+3)(x+1) = 0$$

ANSWERS  $x = -3, -1$

- (A)  $x = 3, 1$
- (B)  $x = -3, -1$
- (C)  $x = 3, -1$
- (D)  $x = -3, 1$

2.) YOU TRY: Given that one zero of  $f(x) = x^3 - x^2 - 14x + 24$  is 3, what are the other two zeros?

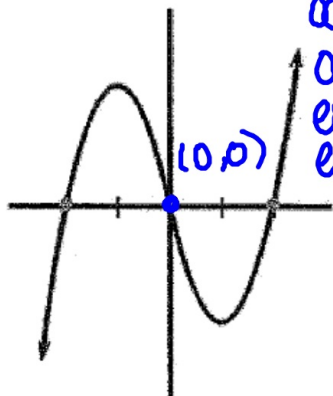
$$\begin{array}{r|rrrr} 3 & 1 & -1 & -14 & 24 \\ & \downarrow & 3 & 6 & -24 \\ \hline & 1 & 2 & -8 & 0 \end{array}$$

$$x^2 + 2x - 8 = 0$$

$$(x+4)(x-2)$$

$$x = -4, 2$$

3.) Which of the following equations could represent the graph below:



odd ⊕ ↓ ↑  
odd ⊖ ↑ ↓  
even ⊕ ↑ ↑  
even ⊖ ↓ ↓

a.)  $x^3 + 4x$

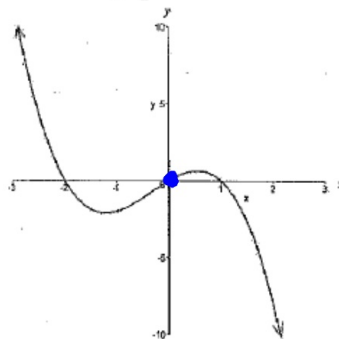
b.)  $x^3 - 4x$

c.)  $x^3 - 2x + 2$

d.)  $-x^3 + 2x - 2$

$(0)^3 - 4(0) = 0$  ↓ ↑  
 $(0)^3 - 2(0) + 2 = 2$  odd ⊕

3.) YOU TRY: Which of the following equations could represent the graph below:



a.)  $x^3 - 2x^2 + 1$

b.)  $-x^3 + 2x^2 - 1$

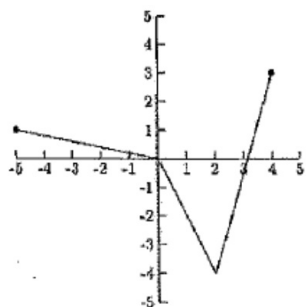
c.)  $x^3 - x^2 - 2x$

d.)  $-x^3 + x^2 + 2x$

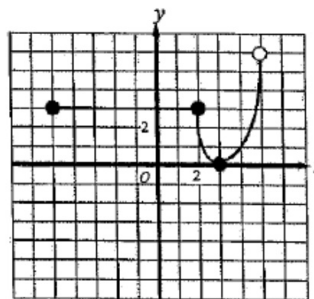
↑ ↓  
odd ⊖

$(0)^3 + (0)^2 + 2(0) = 0$

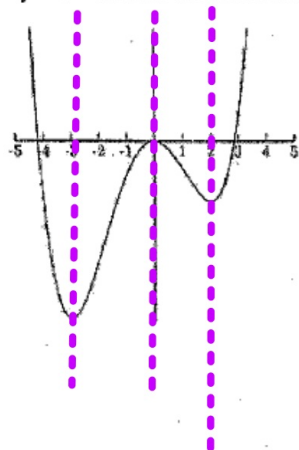
4.) State the domain and range.



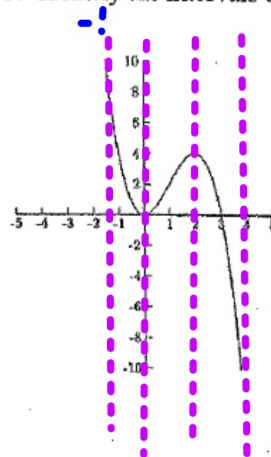
4.) YOU TRY: State the domain and range.



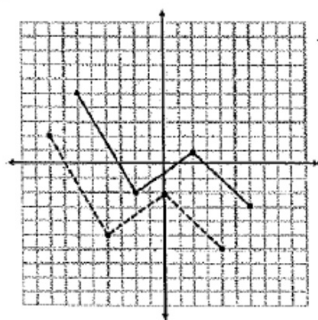
5.) Identify the intervals of increase and decrease.



5.) YOU TRY: Identify the intervals of increase and decrease.

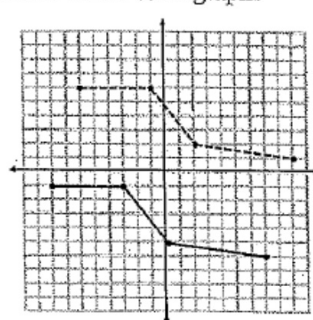


6.) The solid graph represents the graph of  $f(x)$ . The dotted graph represents which transformation of the solid graph?



- a.)  $f(x - 2) + 3$
- b.)  $f(x + 2) - 3$
- c.)  $f(x + 3) - 2$
- d.)  $f(x - 3) + 2$

6.) YOU TRY: The solid graph represents the graph of  $f(x)$ . The dotted graph represents which transformation of the solid graph?



- a.)  $f(x + 2) - 7$
- b.)  $f(x - 2) + 7$
- c.)  $f(x + 7) - 2$
- d.)  $f(x - 7) + 2$

$$\log_3 27 = x$$

$$3^x = 27$$
$$x = 3$$

$$\log_5 \frac{1}{25} = x$$

$$5^x = \frac{1}{25}$$
$$x = -2$$

$$\log_2 16 = x$$

$$2^x = 16$$
$$x = 4$$

$$6,500,000(1.04)^{10}$$

9,621,588 people

$$3\sqrt{75} - 2\sqrt{48} + \sqrt{300}$$

$$\begin{array}{c} \hat{5} \quad \hat{5} \\ 5 \sqrt{3} \end{array}$$

$$\begin{array}{c} \hat{16} \quad \hat{3} \\ 4 \sqrt{3} \end{array}$$

$$\begin{array}{c} \hat{100} \quad \hat{3} \\ 10 \sqrt{3} \end{array}$$

$$15\sqrt{3} - 8\sqrt{3} + 10\sqrt{3}$$

$$\boxed{17\sqrt{3}}$$

$$\boxed{17\sqrt{3}} = 29.44$$

$$4^{4x-1} = 64^{2x-11}$$

$$\cancel{4}^{4x-1} = \cancel{4}^{3(2x-11)}$$

$$\cancel{4x-1} = \cancel{6x-33}$$

$$\cancel{-4x+33} - \cancel{4x+33}$$

$$32 = 2x$$

$$\boxed{x=16}$$

$$500(.82)^5$$



$$\sqrt[3]{54x^7y^9z^2}$$

$$3x^2y^3\sqrt[3]{2xz^2}$$

